

MEC Keypad Part Number MEC-0011 General Specification

The keypad is a translucent silicone rubber keypad with designed to be used with backlighting. It consists of 6 compressible keys and 3 non-compressible LED window protrusions. The compressible keys should have a stroke of 1mm +/- 0.1 mm and have a maximum force of 140 grams +/- 15 grams. The snap ratio should be in the range of 40-50%.

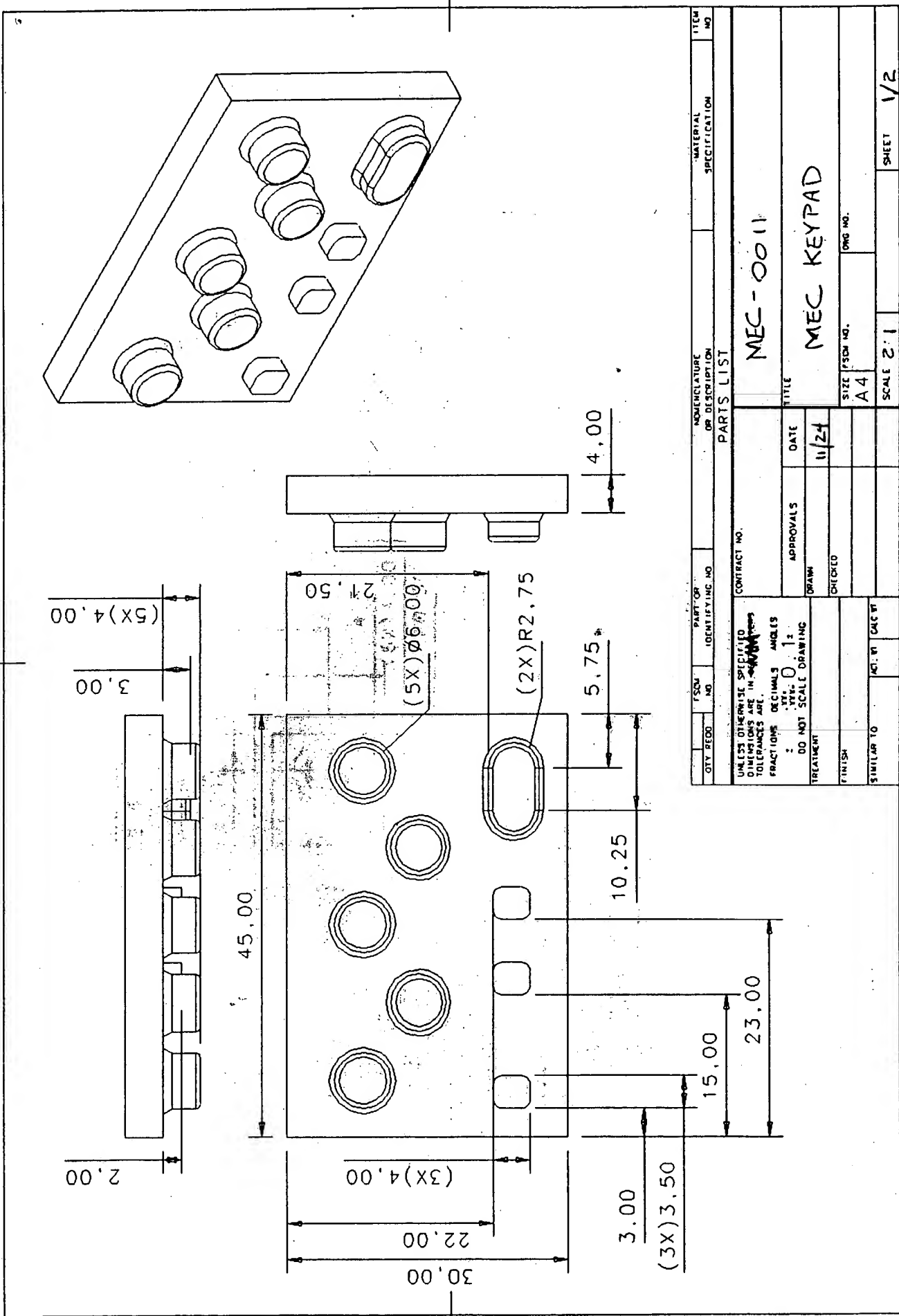
Graphics should be coated for wear/chemical resistance. Air channels are not shown but are allowed on the backside from key to key. No through perforations are allowed (sealed application). Carbon conductors of the highest quality should be used to achieve minimum possible resistance on switch closure.

Drawing Notes:**General:**

Compressible keys have 0.5mm radius on key top edge, LED window protrusions have a sharp top edge. See attachment for legend information.

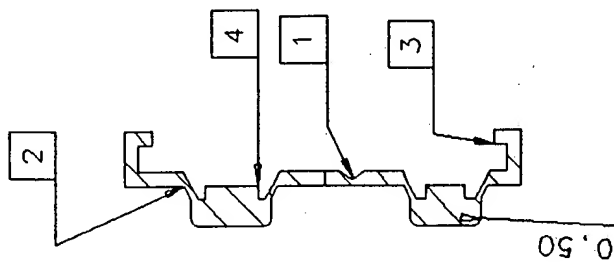
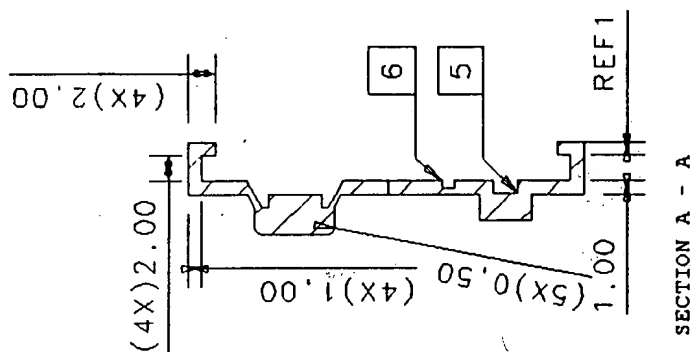
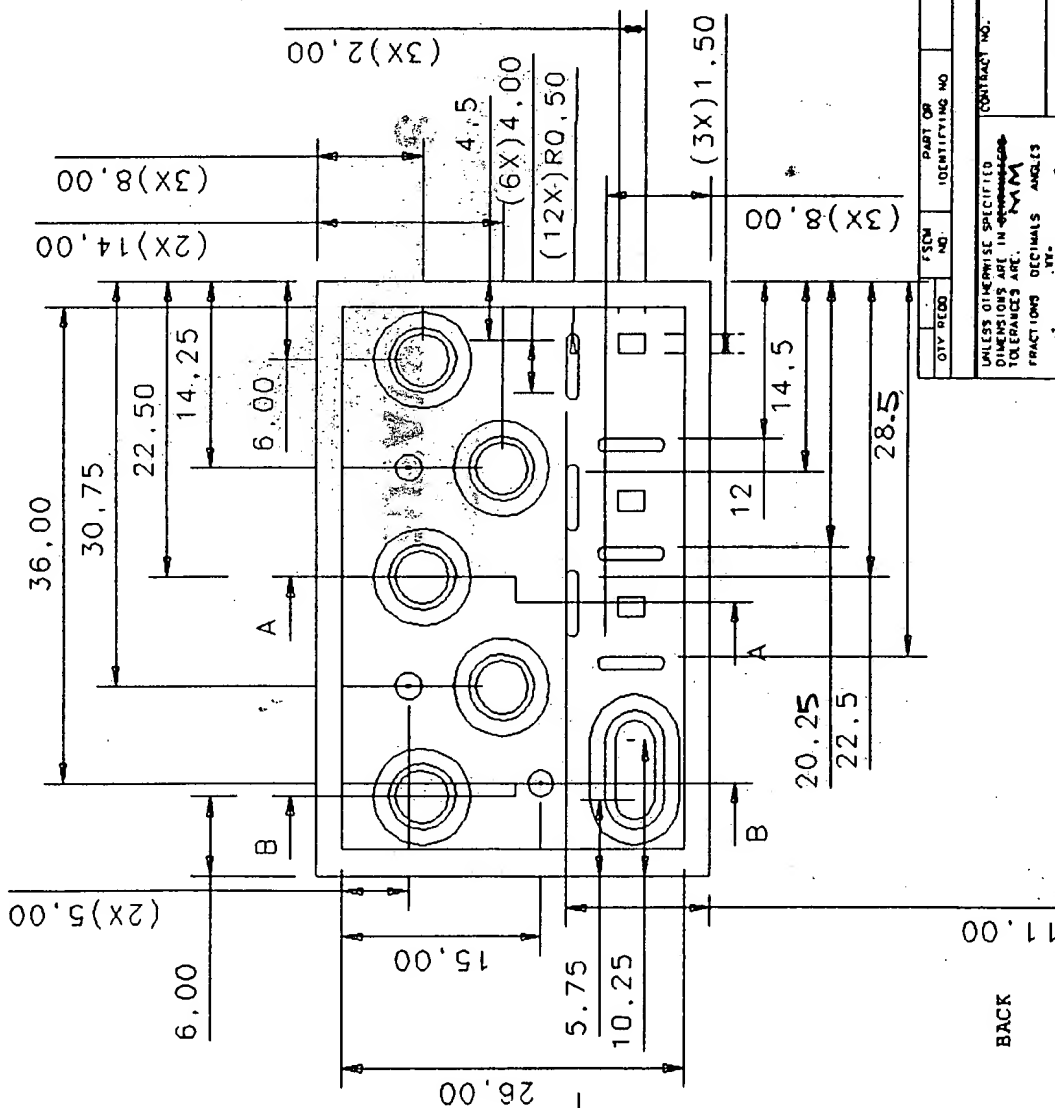
- 1.** Conical depressions (3X), 2mm in diameter, 30 degree chamfer.
- 2.** Web to be designed as per the force specification but should not extend more than 1mm beyond the solid key periphery,
- 3.** Feature to extend the full perimeter of the keypad.
- 4.** Carbon conductors are 4mm diameter (5X) and 3X5.5 (1X).
- 5.** LED relief features (3X) to be 0.9mm in depth.
- 6.** Channels (6X) to be 1mm wide and 0.5mm in depth. Positioning dimensions to channels are to the theoretical centerline of 0.5 mm radius end features.

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QTY REQD	FSOW NO	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ITEM NO
PARTS LIST					
CONTRACT NO.			MEC-0011		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE:			TITLE		
FRACTIONS DECIMALS ANGLES			MEC KEYPAD		
: .0125 0.125			DATE 11/24		
DO NOT SCALE DRAWING			APPROVALS		
TREATMENT			DRAWN		
FINISH			CHECKED		
SIMILAR TO			SCALE 2:1		
ACT. WT			SHEET 1/2		

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SECTION A - A

SECTION B - B

QTY REQD		PSCH NO.	PART OR IDENTIFYING NO.	HOMECLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ITEM NO.
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN FRACTIONS MM TOLERANCES ARE: MM FRACTIONS DECIMALS ANGLES			CONTRACT NO.			
2. DO NOT SCALE DRAWING			APPROVALS	DATE	TITLE	
3. 1/16"			DRAWN	11/24	MEC-0011	
4. 1/32"			CHECKED		MEC KEYPAD	
5. 1/64"					SIZE 1/8" X 11"	DRWG NO.
6. 1/128"					A4	
7. 1/256"					SCALE 2:1	
8. 1/512"						SHEET 2/2
9. 1/1024"						
10. 1/2048"						
11. 1/4096"						
12. 1/8192"						
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11-29-1997 12:00PM FROM ELITE SALES TECH 919 772 8073

P. 1

ELITE SALES & TECHNOLOGY, LTD.

4904 Comella Drive Raleigh, NC 27603-4204 USA

Phone: 919 772-7042 / Fax: 919 772-8073 / E-mail: elitesales@elitesales.com / http://www.elitesales.com

FACSIMILE QUOTATION FORM

Date:	Friday, November 28, 1997	No. of Pages:	1 of 2
To:	Mr. Tony Hancock	Ref. No.:	ES-11287A
Company:	MEC, Inc.	Phone No.:	606 299-2870
Address:	1783 Iron Works Road Lexington, KY 40511	Fax No.:	606 299-7885
Subject:	Elite Quotation # 11166 P/N MEC-0011	Code:	455

Dear Tony:

Listed below is our quotation covering your recent request for pricing. Please carefully review the notes section to confirm that all required product features will be provided. If quotation comparisons are made, please pay close attention to the listed product features and the number of production tool cavities as these items will affect unit pricing.

TOOLING

Proto-Type Tool	\$ 2,200.00	Production Tool	\$ 5,600
No. of Samples	10 (included)	No. of Cavities	48 (48 pcs. included)
Lead Time	25 - 30 Days	Lead Time for First Article Parts	30 - 35 Days

UNIT PRICE

Proto-Type Samples	Price Each	Lead Time	Prod. Qty.	Price Each	Lead Time
1 - 50	\$ 6.00	25 - 30 Days	1,000	\$ 0.31	30 - 35 Days
			5,000	\$ 0.26	30 - 35 Days
			10,000	\$ 0.23	30 - 35 Days
			25,000	\$ 0.22	30 - 35 Days
			50,000	\$ 0.21	30 - 35 Days

(All Lead times are expressed as business days shipped from Taiwan and order placement)

NOTES: Shipment Terms - **FOB Taiwan** Shipment Method: **FedEx**
 One (1) base material color and One (1) printing color. Conductive carbon pills
 Parts will be supplied to print / notes requirements.
Landed USA pricing furnished upon request. / Please review attached Feature Chart
 Release quantity changes may effect pricing. Ship dates are bus. days from order placement. C&F / CIF pricing includes std shipping methods only. Special shipping chgs. invoiced separately. All rubber parts are manufactured to standard "Ultra-Precise" tolerance levels. Price breaks are based on new orders only, not the accumulated quantities of existing PO(s).

TERMS: Net 30 (with approved credit) 50% of tooling charge due at order placement. Balance due upon receipt of proto-type samples and/or first article parts. Quoted pricing will be firm for thirty (30) days only. New / first time orders must be submitted with three (3) Trade and one (1) bank reference(s).

Elite Sales & Technology, Ltd. acts as an independent United States sales agent for domestic and international manufacturers and suppliers. Elite Sales, at no time and in no manner may be held responsible for claims regarding defective parts, delayed shipments or any other dispute involving these represented manufacturers or suppliers. By accepting Elite's quotation and issuing a purchase order, the customer agrees to these conditions. Elite Sales will always make every effort to assist the customer in matters concerning disputes and advertised product warranty.

Thank you for the opportunity to offer this quotation. If accepted, every effort will be made to supply the very best in quality parts and customer service. We will always represent your company's best interest to our suppliers.

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12 01PM FPO:1 ELITE SALES TECH 519 772 8073

P 2

ELITE'S QUOTED KEYPAD FEATURES**Elite Quotation Number 11166****Quotation Date****11/28/97****Page 2**

This chart is provided to explain different keypad features that your application requires. Please review, particularly if quotation comparisons are made. Elite is confident that our pricing will be very competitive if the same keypad features are quoted by all suppliers.

✓	PRODUCTION TOOL CAVITY NUMBER Generally, the higher the number of cavities the lower the unit cost but the higher the tool cost. The number of tool cavities can be limited by the individual keypad size. When selecting the number of tool cavities the supplier/ toolmaker will consider what is in the best interest of the customer and what is feasible.
✓	MATERIAL DUROMETER: (Hardness) <u>OIL & SOLVENT RESISTANCE</u> The higher the durometer number the harder the material. Generally, keypad/keytop durometers range from 50° to 80° durometers. Some keypads may require "dual durometers" which refers to the keypad base being one hardness and the keytop being generally harder and possibly a different color. Dual durometer requirements will dramatically affect pricing.
✓	MATERIAL COLOR: Generally listed as <u>translucent</u> or colored. Almost any color is available if color chart reference number is provided. If colored, the number of different colors will affect pricing.
✓	PRINTING/GRAPHIC COLOR: <u>BLACK</u> Almost any color is available if color chart reference number is provided. The number of different colors will affect pricing.
✓	CONDUCTIVE CONTACTS: <u>CARBON PILL</u> Available conductive contact types are conductive ink, conductive pill, gold and silver. Conductive pills are by far the most popular. Type and number per key will affect pricing. Keypads can also be supplied with no conductive contacts.
✓	AIR CHANNELS: An air path from key to key and/or to the keypad edge. This allows the key switch to return to its normal position after being depressed. This feature will not significantly increase the price.
	MOUNTING BOSS: An alignment feature molded to the keypad bottom. Mounting boss will aid in the keypad alignment with the circuit board and/or bezel. This feature will affect pricing.
	LASER ETCHED PRINTING TECHNOLOGY: Generally selected when keypad back-lighting is required. When the light should only penetrate the graphics. This is a several step process and dramatically affects pricing.
	KEYTOP OVERCOAT: Clear silicone ink applied over the printed graphics. Two coats can be applied and will extend the printing life. This overcoat will affect pricing.
✓	SEALPLAST PROTECTIVE COATING: Shown to be one of the best available protective coatings available. This spray technology can be supplied in a matte or glossy finish and will increase the printing life by some 15 times. It also prevents moisture and oils penetration. Sealplast also removes the "rubber" feel and provides a smooth finish. This technology will affect pricing depending on overall keypad size.
	KEYPAD MEMBRANE ASSEMBLY: Standard keypad with an attached domed membrane panel. Conductive contacts can be etched carbon, silver or gold. The membrane is aligned and attached by the keypad manufacturer (important) and provides a very low profile keypad with good "tactile feel". This feature will dramatically affect pricing.
	EPOXY KEYTOPS: Clear epoxy resin molded to keytop for an improved cosmetic appearance and extended printed life. This technology will dramatically affect pricing.

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